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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/757,886	01/10/2001	Bernardinus Henricus Bosmans	TS0968 (US)	8086

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EXAMINER

BUSHEY, CHARLES S

ART UNIT PAPER NUMBER

1724

DATE MAILED: 03/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/757,886

Applicant(s)

BOSMANS ET AL.

Examiner

Scott Bushey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1 sht.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Applicant should note that while the U.S. patents listed in the specification have been reviewed, the non-patent literature references and the foreign patent references are not readily available and have not been considered. If applicant wishes that the non-patent literature references and the foreign patent references listed in the instant specification be considered, then applicant should submit complete copies of the references and cite them on an accompanying Form PTO-1449.

Specification

2. The abstract of the disclosure is objected to because legal phraseology, i.e., "consisting of" and "consist of", should be avoided in the abstract. Correction is required. See MPEP § 608.01(b).

Drawings

3. The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81. No new matter may be introduced in the required drawing.

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4. **In accordance with paragraph 3 above, applicant is required to submit a proposed drawing correction in reply to this Office action.** However, formal correction of the noted defect may be deferred until after the examiner has considered the proposed drawing correction. **Failure to timely submit the proposed drawing correction will result in the abandonment of the application.**

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the structure as recited by instant claims 1-10, must be shown or the features canceled from the claims. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-5, 7, and 8 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by WO 99/12621 (Fig. 9).

8. Claims 1, 2, 7, and 8 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by EP 0 092 262 A1 (Figs. 1 and 2).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 092 262 A1.

EP 0 092 262 A1 (Figs. 1 and 2) as applied to claims 1, 2, 7, and 8 above, substantially discloses applicant's invention as recited by instant claims 3-5, except for the lower end cross-section of the downcomer being between about 10% and 30% of the upper end cross-section of the downcomer, as recited by instant claim 3, the liquid discharge opening being an elongated opening, as recited by instant claim 4, and each of the downcomers extending entirely across the respective tray, as recited by instant claim 5. The EP reference does disclose that the lower end cross-section of the downcomer, according to the reference drawings, is about 33% of the upper end cross-section of the downcomer, the liquid discharge opening is in the form of a series of

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circular openings fed by an elongated channel opening, and that at least some of the downcomers extend entirely across the tray of the reference (see Fig. 2). It would have been obvious for an artisan at the time of the invention, to modify the structure of the reference apparatus to conform to the claim limitations of instant claims 3-5, since such would not deviate from the general teachings of the reference and would only modify the operation thereof in a manner well understood and expected by one having ordinary skill in the art.

12. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over either WO 99/12621 or EP 0 092 262 as applied to claim 1 above, and further in view of Jenkins.

WO 99/12621 (Fig. 9) and EP 0 092 262 (Figs. 1 and 2) as alternatively applied to claim 1 above, each substantially disclose applicant's invention as recited by instant claim 6, except for the downcomers being alternately arranged relative to a diametrical line that divides the tray into two sections.

Jenkins (Abstract; Figs. 4, 13 and 14; col. 6, lines 10-13) disclose trays divided into sections along a diametrical line, and downcomers arranged alternately relative to the line on each of the tray sections. It would have been obvious for an artisan at the time of the invention, to modify the trays, as taught by either of the alternative primary references, to include two sections divided along a diametrical line, and to provide alternating downcomers on each of the sections, in view of Jenkins, since such would for greater contact between the phases on each of the trays within the column.

13. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over either WO 99/12621 or EP 0 092 262 as applied to claims 1, 2, 7 and 8 above, and further in view of either Sampath et al or Yu et al.

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WO 99/12621 (Fig. 9) and EP 0 092 262 (Figs. 1 and 2) as alternatively applied to claims 1, 2, 7, and 8 above, each substantially disclose applicant's invention as recited by instant claim 9, except for inlet weir means being provided between the area just below the liquid discharge openings of the respective downcomers and the adjacent bubble area.

Sampath et al (106 in Fig. 3) and Yu et al (4 in Fig. 2) each alternatively disclose inlet weir means being provided between the area just below the liquid discharge openings of the respective downcomers and the adjacent bubble area. It would have been obvious for an artisan at the time of the invention, to provide the area just below the liquid discharge openings of the respective downcomers of either of the alternative primary references, with an inlet weir, in view of either of the secondary references, since such would even the flow of liquid across the bubble zone, thereby maximizing the phase contact on the tray in a well known manner.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Bushey whose telephone number is (703) 308-3581. The examiner can normally be reached on Monday-Thursday 6:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Simmons can be reached on (703) 308-1972. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7718 for regular communications and (703) 872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Scott Bushey
Primary Examiner
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csb
March 19, 2002

A handwritten signature in black ink, appearing to read 'Scott Bushey', written over the printed name.

3-19-02